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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,180	02/14/2001	Masato Sumikawa	0033-0694P	2465

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

NGUYEN, DILINH P

ART UNIT PAPER NUMBER

2814

DATE MAILED: 01/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/782,180

Applicant(s)

SUMIKAWA ET AL.

Examiner

DiLinh Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1-2 and 4-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Jiang et al. (U.S. Pat. 6184064).

Jiang et al. disclose a method of fabricating a semiconductor component (figs. 1-2, column 7, lines 10-50) comprising:

providing a semiconductor component 100 having an active surface 102 and a back side surface 104;

texturing the back side surface of the semiconductor component to create a uneven surface;

providing an external connection electrode to the active surface 102 (column 7, lines 15-25);

providing a wafer tape 114;

providing an encapsulation compound 122 (column 7, lines 45-50), wherein the compound may include epoxies, thermoset resins, silicones, silicone-carbon resins polyimides, and the like.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jiang et al.

- Regarding claim 6, it is obvious to provide the step of cutting the substrate after the step of applying resin on the back side surface of the semiconductor component.
- Regarding claims 7-8, it would have been obvious to grind the surface to insure flatness before texturing, to improve adhesion.5.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jiang et al. in view of Horiuchi et al. (U.S. Pat. 6242799).

Jiang et al. disclose the claimed invention except for the resin is formed of a material having an elastic modulus of $1.5 \times 10^6 \text{ N/m}^2$ to $5.0 \times 10^6 \text{ N/m}^2$. Horiuchi et al. disclose a resin having a Young's modulus of 10 MPa or less (column 5, lines 50-55). Horiuchi et al. do not specifically point out the range of the Young's modulus is from $1.5 \times 10^6 \text{ N/m}^2$ to $5.0 \times 10^6 \text{ N/m}^2$, but 10 MPa or less is included in the range. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Jiang et al. to provide a resin are suitably used, as shown by Horiuchi et al.

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6. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jiang et al. in view of Sakaguchi et al. (U.S. Pat. 6150194).

Jiang et al. disclose the claimed invention except for the step of the resin is printed. Sakaguchi et al. disclose a method for producing a semiconductor device, comprising the step of: resin is printed (column 4, lines 60-64) to provide better control of thickness of the resin layer on a tape substrate. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Jiang et al. to control the appropriate thickness of the resin layer for the device, as shown by Sakaguchi et al.

7. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jiang et al. in view of Takahashi et al. (U.S. Pat. 6153448).

Jiang et al. disclose the claimed invention except for the step of the resin is applied by spin-coating. Takahashi et al. disclose a method for manufacturing a semiconductor device comprising the step of:

an insulating resin is spin-coated on the semiconductor wafer (column 8, lines 51-54) to adjust the thickness of the resin layer. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Jiang et al. to adjust the thickness of the resin layer for the device, as shown by Takahashi et al.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (703) 305-6983. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, OLIK CHAUDHURI can be reached on (703) 308-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DLN
January 28, 2002


Douglas Wille
Patent Examiner